HP Branch Office Consolidation Solutions for midsize businesses

Cut costs, lower risks, and enhance productivity

Solution guide

Stay competitive in a dynamic business environment

No matter what the global business climate, businesses are always looking to stay competitive. The recommended route towards gaining a competitive advantage is to improve the business cost structure and enhance organizational efficiency. Many organizations choose to consolidate branch offices to cut capital and operational expenses and focus on increasing productivity of frontline employees at these offices. What's more, as more employees take on the responsibility of generating revenue and customer relationships start to depend on a consolidated IT infrastructure, reducing business disruption becomes crucial.

How can your business cut costs, lower risk of disruption, and enhance business productivity? It's simple. Implement branch office consolidation solutions that integrate your technology infrastructure, protect business-critical data, and empower your employees to work smarter.

HP Branch Office Consolidation Solutions for your business

HP Branch Office Consolidation Solutions for midsize businesses have been designed to address your specific business needs. At HP, we understand that for a small or midsize business, IT efficiency is critical. But so is delivering more business value. Additionally, you have to factor in realities like data growth and complexity, business disruptions, communication breakdowns, increased competition, consolidation, and acquisitions. With so much going on and resources so stretched, it can be difficult to tackle challenges both efficiently and strategically. Regardless of what your business challenges are, one imperative trumps them all: **Do more with less.**

Fortunately, it also echoes a revolution taking place right now. Virtualization, cloud-based software and services, and the convergence of new and existing technologies are making it possible for us to get more done with fewer resources. Costly IT silos are being transformed into end-to-end infrastructures that integrate technical components, automate processes, and simplify technology from purchase to retirement.

At HP, we call this a "Converged Infrastructure." It's all about delivering modular, standards-based technologies designed for convergence. The result is an infrastructure that simplifies, integrates, and automates it all: storage, networking, servers, management software, even power and cooling. And the efficiency gains allow you to shift the bulk of your IT budget from operations to business innovations. The components of an HP Converged Infrastructure deliver the value you need today by positioning you to manage, protect, and grow your business through each pain point and milestone.

It's the future of IT—available today for your business. HP is a recognized leader of the IT convergence movement. With the world's largest technology portfolio, we have the building blocks and the resources to pull it all together to provide the Converged Infrastructure solution that meets your specific needs. From your first virtualized server to predefined solutions that target specific business milestones, we can help you achieve the benefits of convergence wherever you are on your infrastructure journey.

Simplify doing business across branch offices with a tightly integrated and streamlined Converged Infrastructure to help manage, protect, and grow business.

- HP Insight Control helps reduce server deployment time from 4 hours to just 20 minutes: a 12x decrease[1] in deployment time.
- Improve availability and lower costs by 40 percent[2] by converting internal server drives into shared storage with HP P4000 Virtual SAN Appliance Software.
- Get up to 66 percent[3] lower TCO with HP Networking Solutions.
- Nearly 100 percent diagnostic accuracy and up to 20 percent reduction in resolution time of system problems with HP Insight Remote Support.[4]

Make it easier to do business across branch offices with simple solutions from HP.

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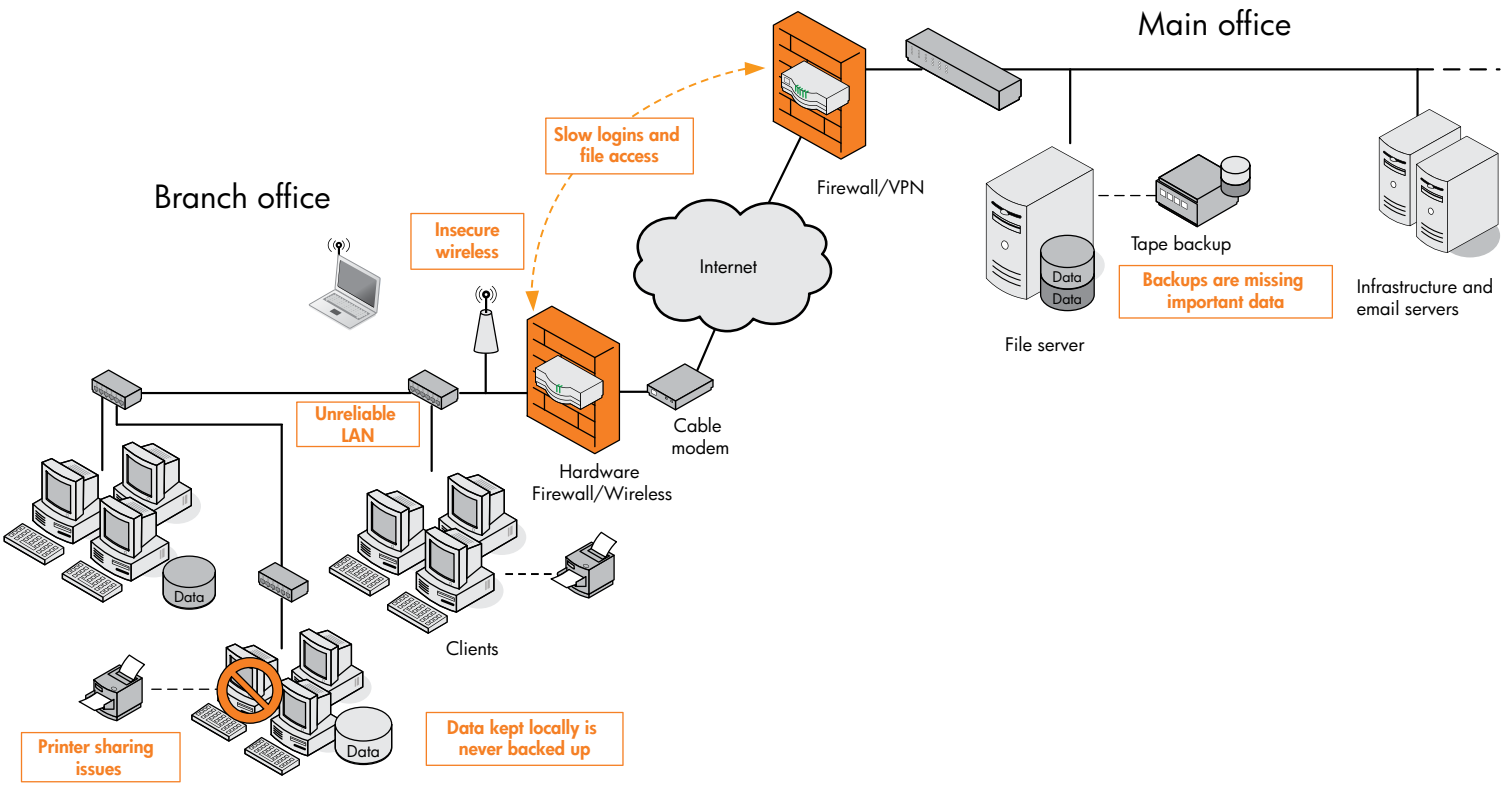
[1] Source: TTX Company success story, June 2009

[2] Based on July 2009 list price comparison between a 4 TB dual-controller Dell EqualLogic PS6000 and the HP P4000 VSA Software plus 24, 250 GB HDDs used to create the virtual iSCSI SAN in a VMware deployment.

[3] Source: "ROI of a Complete Networking Portfolio: Delivering Value from the Network Edge to the Core", IDC white paper sponsored by HP, September 2010

[4] Source: Based on internal data analysis done in EMEA in August 2008. This analysis was done on equipment with Remote Support Monitoring vs. equipment without Remote Support Monitoring.

Figure 1 A:
A small branch office network before implementing HP Branch Office Consolidation Solutions



Choose consolidation solutions for your specific business needs

Scenario 1

A small consolidated branch office supporting 10–15 employees. As a higher number of employees share a consolidated office, the peer-to-peer network has become increasingly inefficient, reducing productivity, and increasing operational risks.

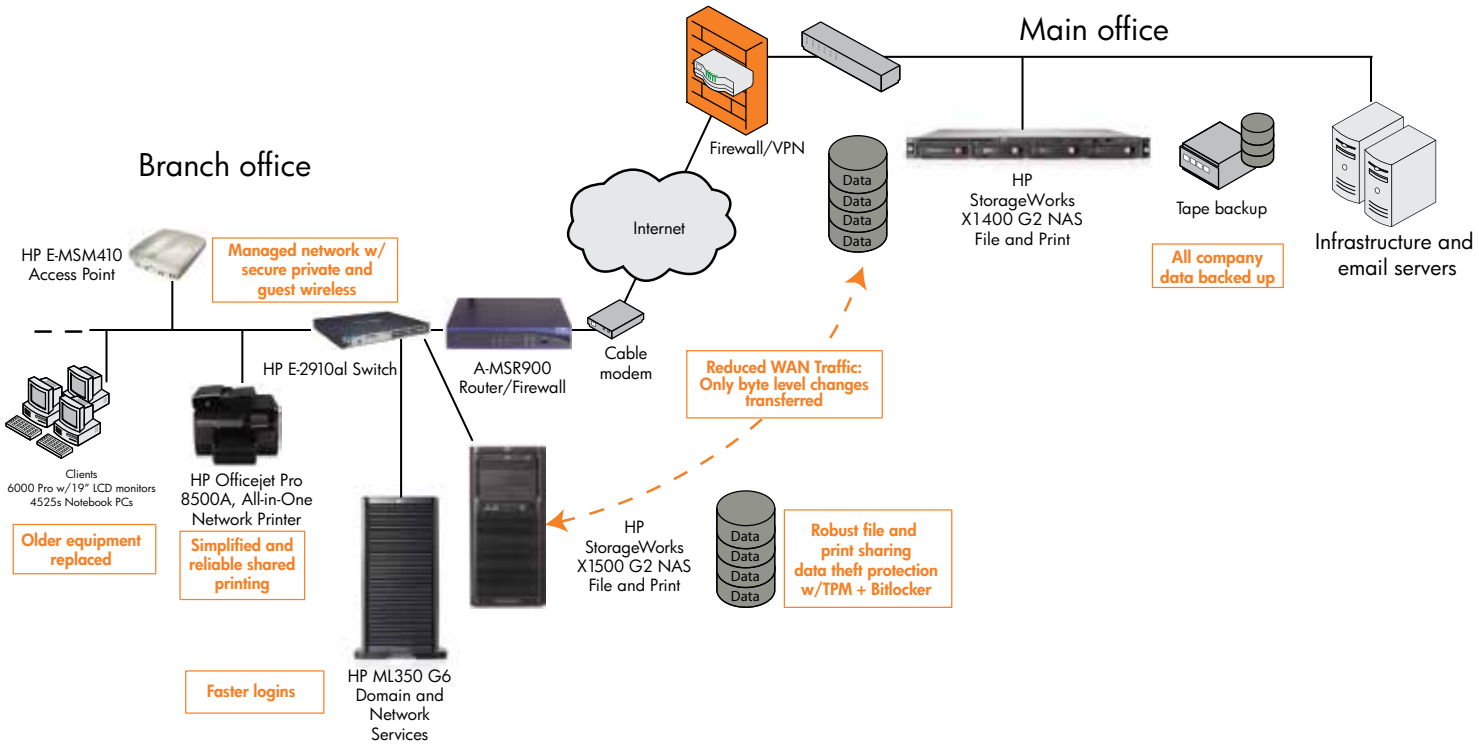
A small consolidated branch office without HP Branch Office Consolidation Solution (Refer: Figure 1 A)

Small branch offices have the same administrative concerns as larger organizations. They need to protect local data, provide access to vital information stored at the head office, and deliver quick and efficient support. No servers are deployed in the branch office and employees connect to a server at the head office to access shared company data, email and Web. The branch office has a broadband Internet connection protected by a hardware firewall for site-to-site VPN.

Typical challenges

- **IT personnel:** In case of IT problems that need immediate attention, there is no local support or onsite IT assistance at the branch offices. This affects productivity and customer service.
- **WAN speed:** Slow access to the head offices' file shares affect productivity. Employees face login problems intermittently. Lack of WAN security is also a concern.
- **Data growth:** Inefficiencies associated with data, file, and application access create complexities with availability, utilization, and management.
- **Data protection:** Data growth, coupled with manual, error-prone backup and recovery processes put data and business at risk. Risky backup/recovery processes also contribute to bottlenecks and affect the reliability of the entire backup process.
- **Data security:** Offsite data that is not encrypted increases security risks. What's more, maintaining more onsite backups can be both time consuming and costly. Additionally, unauthorized access to PCs and printers also poses a threat to business-critical data.

Figure 1 B:
A small branch office network after implementing HP Branch Office Consolidation Solutions



- **Data backup:** Due to the lack of consistent backup processes, employees tend to keep important files on their PCs rather than the server. These files are easily forgotten and never get a backup, posing a risk to the business.
- **Printing:** The shared printers connected to individual PCs slow down the printing process when the PC is in use. Repeated printer reboots are needed to clear print queues, disrupting work and affecting productivity.
- **PC support:** Client desktops and laptops need frequent upgrades. These machines are a mix of ages, brands, and operating systems.
- **Network:** Poor physical network implementation with multiple low-end hubs/switches cascaded around and cables running under desks.
- **Guest wireless:** Lack of a secure method to provide visiting customers/partners Internet access without sharing the private WEP key, make the network vulnerable to threats.

Proposed solution (Refer: Figure 1 B)

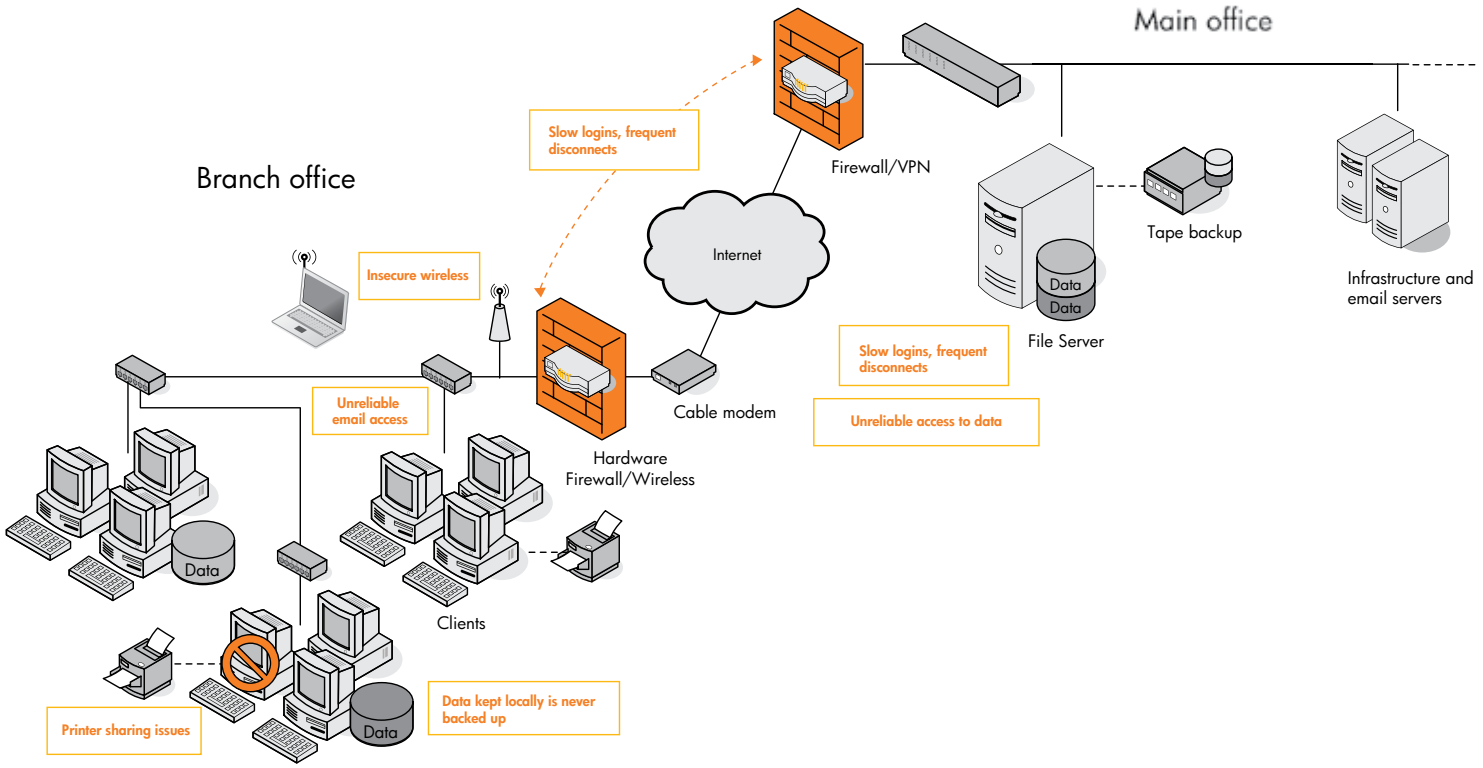
- Deploy the HP ProLiant ML350 G6 server with Windows® Server 2008 Standard Edition
- Upgrade the branch office physical network with:
  - HP E2910al Gigabit Switch
  - HP E-MSM410 Wireless Access Point for central management and secure guest access
  - HP A-MSR900 router for secure WAN connectivity with integrated firewall/VPN access
- HP StorageWorks X1500 G2 Network Storage Systems make it easy to expand, protect, and manage your data. You get:
  - Economical, easy-to-manage shared network storage
  - A file server or disk-based backup/replication target, an iSCSI target for application/virtual environment storage, or both
  - Ease of set up with preinstalled Windows Storage Server 2008 R2 operating system and the HP X1000 Automated Storage Manager for storage provisioning that is quick and easy

- Backup to disk, tape, or other removable media with HP Data Protector Express Software, and replicate data on a scheduled basis to another system using HP Storage Mirroring Software
- Deploy a network printer
  - HP Officejet Pro 8500A All-in-One Printer
  - Enable print queues on the branch server managed remotely with the Print Management Console in Windows Server 2008
- Sell qualifying older desktops and laptops to HP; lease new assets to ensure that the business has an ongoing refresh
- Implement a purchase/upgrade plan for user workstations
  - New machines deployed with Windows 7 Professional
  - HP Backup and Recovery Manager backs-up data to a protected area on the hard drive and HP Total Care Advisor keeps the PCs up-to-date, reducing support issues
  - All-in-one form factor with the HP Compaq 6000 Pro All-in-One Business PC or the HP ProBook 4720s Notebook PC

Solution benefits

- Significantly improve file access time with local storage
- Increase performance by allowing your employees to keep data on the server, rather than on their individual drives
- Windows Server 2008 protects your local data with TPM/Encryption/Server Core, providing faster, more safe logins for employees with Read Only Domain Controller
- Get protection against data loss with automatic offsite data replication using Distributed File System replication
- Improve reliability and performance within the LAN and provide guests wireless access without compromising network security
- Get the added ability to remotely manage the network from the head office
- Retire outdated hardware and eliminate common printing issues, reduce support costs, and do away with older operating system versions on client machines
- Enable enhanced application usage with improved WAN connectivity
- Extend central management capabilities from the head office to remote locations

Figure 1 (i) A:
A small branch office network before implementing HP Branch Office Consolidation Solutions



Small Branch Office Scenario 1 (i)

A small consolidated branch office supporting 10–15 employees.
Exponential growth in business data is putting the existing storage infrastructure under a great amount of stress. Unable to cope with the growing data demands, the infrastructure is slow and highly inefficient. (Refer: Figure 1 (i) A)

Typical challenges

- Storage infrastructure is under enormous stress and is slowing down performance
- Separate, shared-storage devices are expensive and difficult to maintain
- Data backup processes are unreliable and error-prone, putting business-critical data at risk

Proposed solution (Refer: Figure 1 (i) B)

- Two HP ProLiant DL180 G6 servers running Hyper-V
- HP StorageWorks P4000 Virtual SAN Appliance Software transforms server disk drives and external legacy storage into a virtual iSCSI SAN
- Virtual infrastructure, applications, and services using Hyper-V
- HP StoreOnce D2D2503 Backup System with built-in, advanced deduplication software

Solution benefits

- High server availability without the cost and complexity of separate, external shared-storage devices
- Reduce storage acquisition costs with the ability to increase capacity utilization by up to 40 percent[5]
- HP Network RAID functionality provides high availability
- SAN management features without any additional software purchases
- A virtual SAN that is easy to deploy and use[6]
- A cost-effective, easy-to-install, unattended backup solution suitable for an entry-level or remote office
- Centralize disk-based backup and replication/archiving to the main office

[5] Source: Price comparison between HP StorageWorks P4000 and Dell Equalogic, 2009

[6] Free trial available at: www.hp.com/go/tryvsa

Figure 1 (i) B:
A small branch office network after implementing HP Branch Office Consolidation Solutions

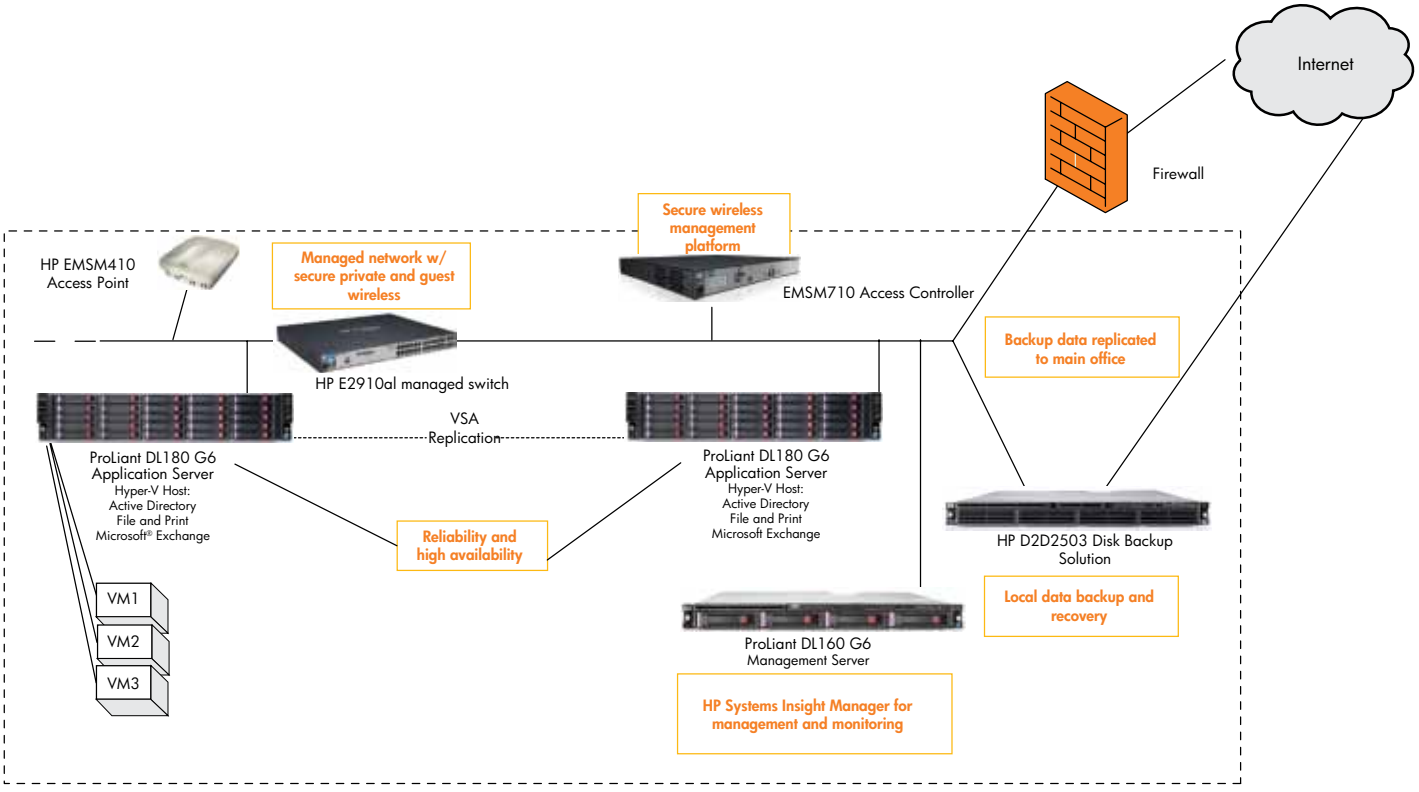
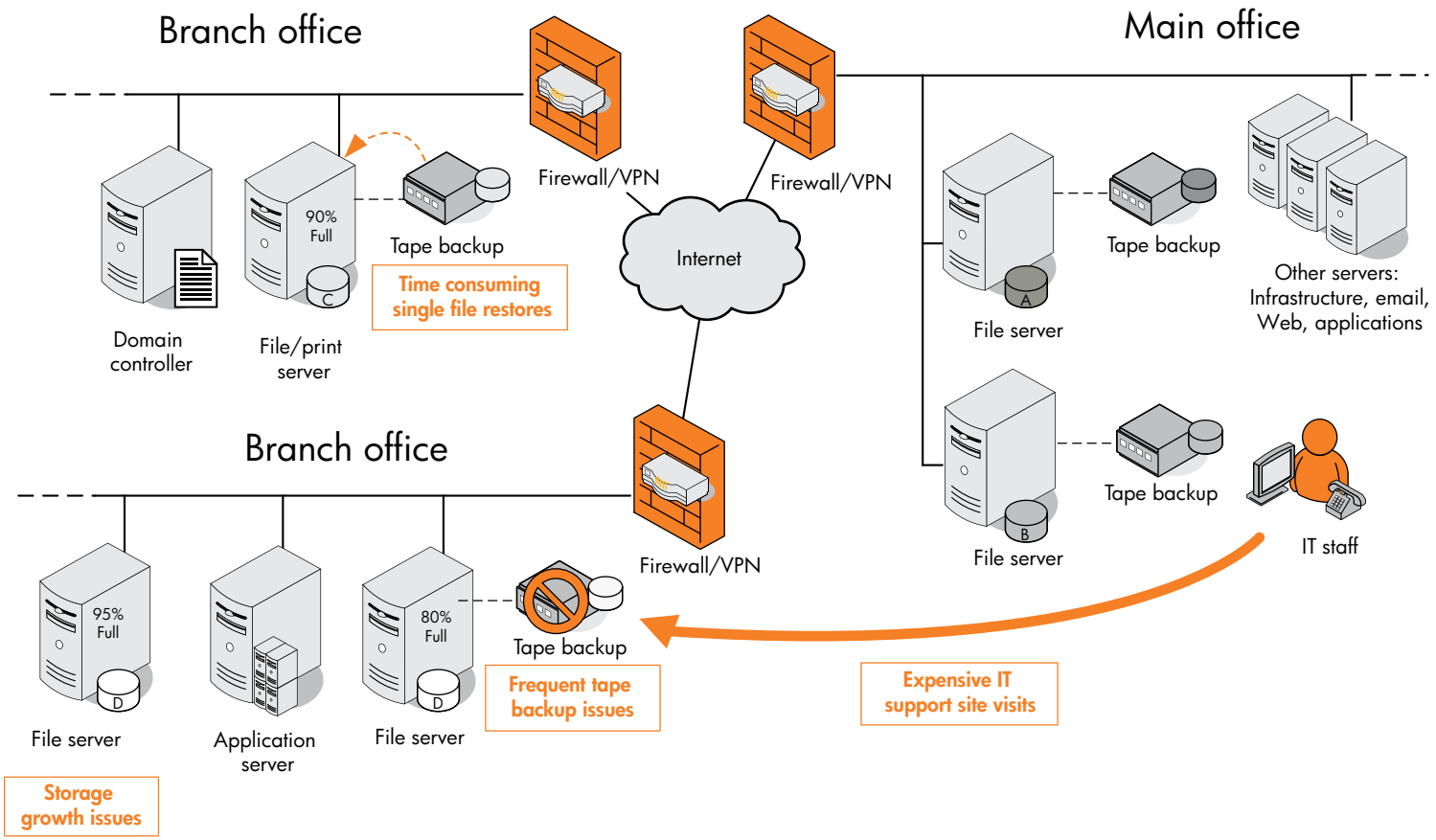


Figure 2 A:
A midsize branch office network before implementing HP Branch Office Consolidation Solutions



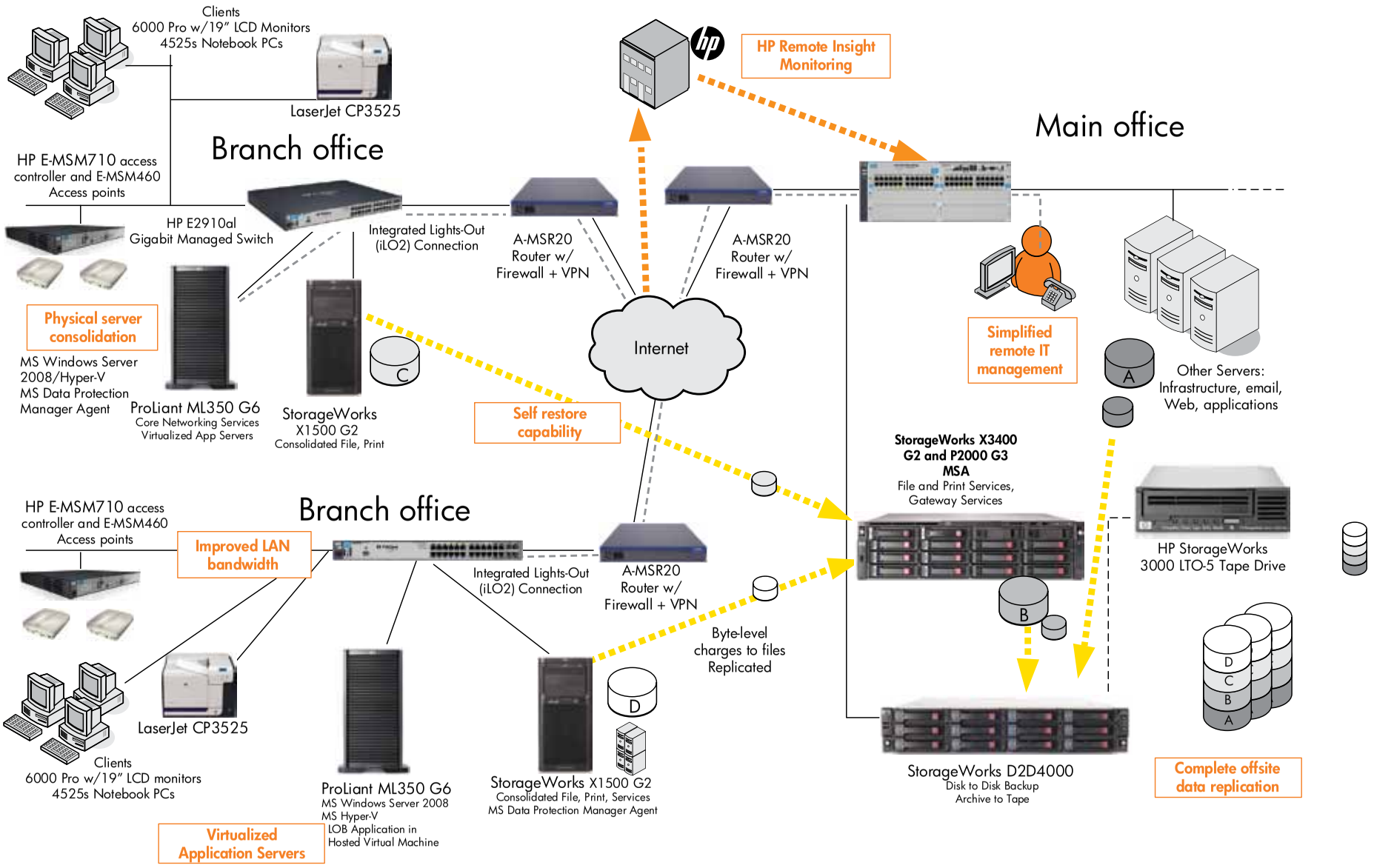
Scenario 2

A midsize consolidated branch office supporting 25–50 employees.
The branch office needs consolidation to lower IT management costs, reduce risk of disruption, and protect valuable data. (Refer: Figure 2 A)

Typical challenges

- **IT personnel:** In case of IT problems that need immediate attention, there is no local support or onsite IT assistance at the branch offices. This affects productivity and customer service.
- **Backup and archival:** The branch office faces frequent backup failures, and has no offsite copy of the backups in case of a disaster.
- **File restores:** Single file recovery is frequently requested by users, but is often not possible due to backup failures. This means completed work has to be redone or recreated.
- **Storage growth:** Unstructured and unpredictable data growth is putting undue stress on the storage infrastructure, making it expensive to maintain, inflexible, and difficult to manage and optimize.
- **IT expenses:** IT staff has to often make after-hours, across-town visits for server maintenance and deal with backup/restore issues. A lot of time is spent in managing disk space and identifying files for archival. The IT team finds it difficult to do server management, because by the time they are notified about a problem, it is already an emergency. They also have to deal with users complaining of slow network speeds, despite pushing the 100 MB network to its limits.
- **Complexity of a distributed network:** The lack of simple remote management increases network problems and demand for onsite services.

Figure 2 B:
A midsize branch office network after implementing HP Branch Office Consolidation Solutions



Proposed solution components (Refer: Figure 2 B)

- Consolidate and standardize on the HP ProLiant ML350 G6 servers with HP Integrated Lights-Out (iLO 2)
- iLO Advanced Pack for remote management and control, and Windows Server 2008

At the main office:

- HP StorageWorks X3400 G2 NAS at main office with external P2000 G3 MSA
- HP Data Protector Software provides greater operational efficiency as you replicate data to the data protection devices
- Unified management of the branch office from the head office reduces risk
- Integrated security for the WAN, as well as the wired and wireless LAN (including guest access) helps improve user experience and application access. This applies to new, networked applications such as voice-over-IP or video distribution
- Easy to deploy and use
  - Intuitive management supports local and remote appliances
  - Integrated Lights-Out management helps lower operational costs
  - Supported by HP Systems Insight Manager for enterprise management and alerting
- HP StoreOnce D2D4000 Backup System with built-in, advanced deduplication software
  - Provides scalable, disk-based backup and rapid restore for increased performance, reduced backup windows, all at a competitive price-performance advantage.
  - Scale from 2 TB to 96 TB raw capacity and backup at speeds of up to 4 TB/hour
  - Provides VTL, NAS, and OST interfaces over Ethernet and Fibre Channel
  - Broad support for industry-standard backup applications
- Consider HP StorageWorks MSL2024 LTO-5 Ultrium 3000 SAS Tape Library with hardware-based data encryption for efficiency around concurrent backups or simultaneous backup and restores

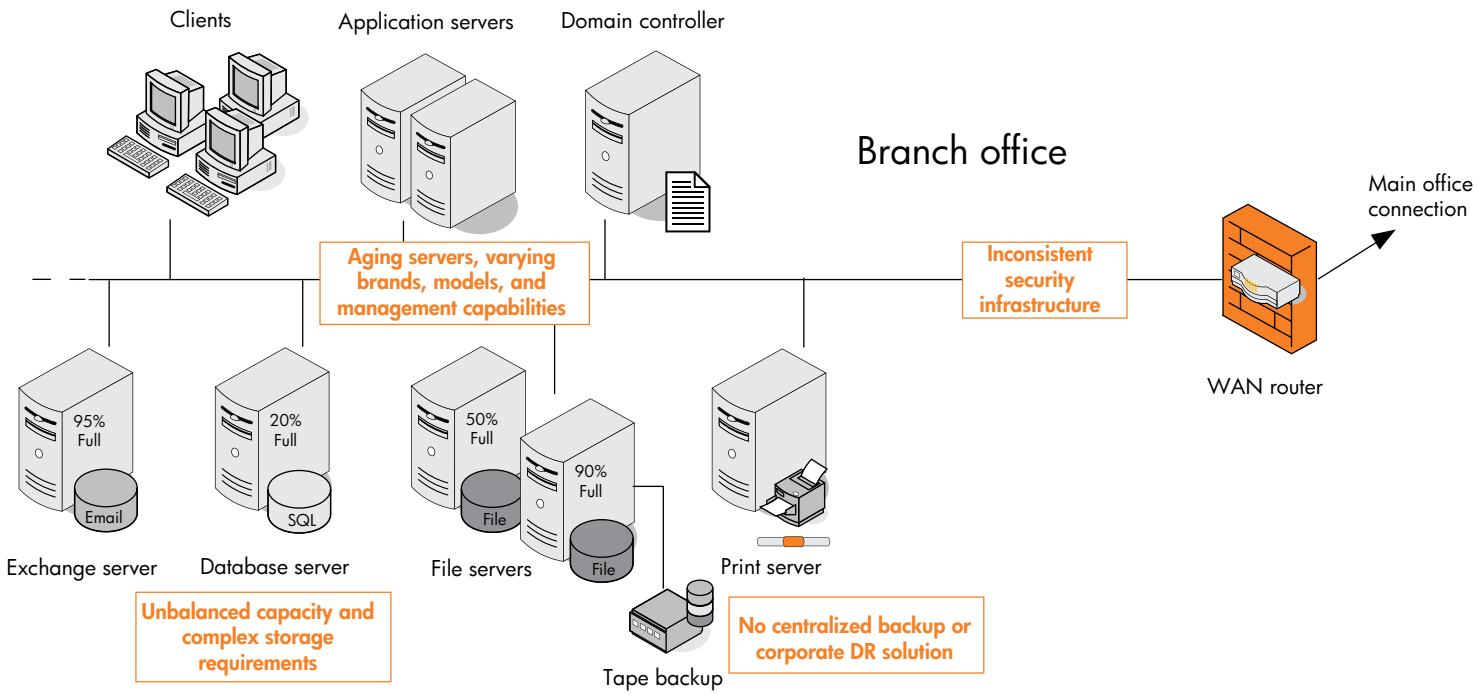
At the branch offices:

- HP ProLiant ML350 G6 server
- HP StorageWorks X1500 G2 Network Storage Systems make it easy to expand, protect, and manage your data. You get:
  - Economical, easy-to-manage shared network storage
  - A file server or disk-based backup/replication target, an iSCSI target for application/virtual environment storage, or both
  - Ease of set up with preinstalled Windows Storage Server 2008 R2 operating system and the HP X1000 Automated Storage Manager for storage provisioning that is quick and easy
  - Backup to disk, tape, or other removable media with Data Protector Express Software
  - Replicate data on a scheduled basis to another system using HP Storage Mirroring Software
- Deploy Microsoft Hyper-V to run a virtual machine that hosts line of business (LOB) applications wherever needed in the branch and reduce the server count
- HP StoreOnce D2D Backup System with built-in, advanced deduplication software reduces capacity requirements and network bandwidth needs, while providing automated, centralized backup for remote data replication back to the main office
- Upgrade network infrastructure
  - Deploy HP E2910al managed Gigabit Switches for reliable high-speed connectivity and create a unified communications and collaboration-ready infrastructure
  - Deploy HP E-MSM 460 access points and HP E-MSM access controller for enhanced security and central access management
  - Deploy HP A-MSR20 router for secure and reliable WAN connectivity

Solution benefits

- **Server consolidation:** With server consolidation you can reduce your physical IT assets and maintenance costs. A virtualized environment eliminates the need for dedicated servers for LOB applications, thereby improving performance, and giving you expandable storage capacity.
- **Virtualization beyond servers**: For virtualized environments, HP extends the benefits of server virtualization with a storage infrastructure designed to address requirements of performance, high availability, efficient capacity utilization, and ease of management. HP StorageWorks P4000 G2 SAN solutions provide capacity and performance scaling without disruptions, and ease of management from a single console.
- **Data protection:** Enhance backup reliability with fully automated, high-performance HP StoreOnce D2D Backup System with built-in, advanced deduplication software to enhance storage capacity, as well as simplify day-to-day management of backup and disaster recovery requirements.
- **Data security:** Offsite data that is not encrypted increases security risks. Consider HP autoloaders or tape libraries with hardware-based data encryption for efficiency around concurrent backups or simultaneous backup and restores.
- **Secure and reliable network connectivity:** Improve workforce efficiency by reducing risk of network outage. HP networking infrastructure at the branch office provides high-availability connections to provide enhanced application access. Integrated management further reduces risks and supports resources.
- **Insight Control Remote Management:** Reduce the need to travel for onsite assistance, or to manage the physical and virtual environment.
- **Effectively plan, deploy, and manage your IT solutions:** HP Care Pack Services for installation and start-up, hardware and software support, and 24x7 mission critical services that improve performance and availability, and help lower costs.
- HP Financial Services can purchase qualifying, displaced equipment for cash or credit toward the sale of new equipment.

Figure 3 A:
A regional branch office network before implementing HP Branch Office Consolidation Solutions



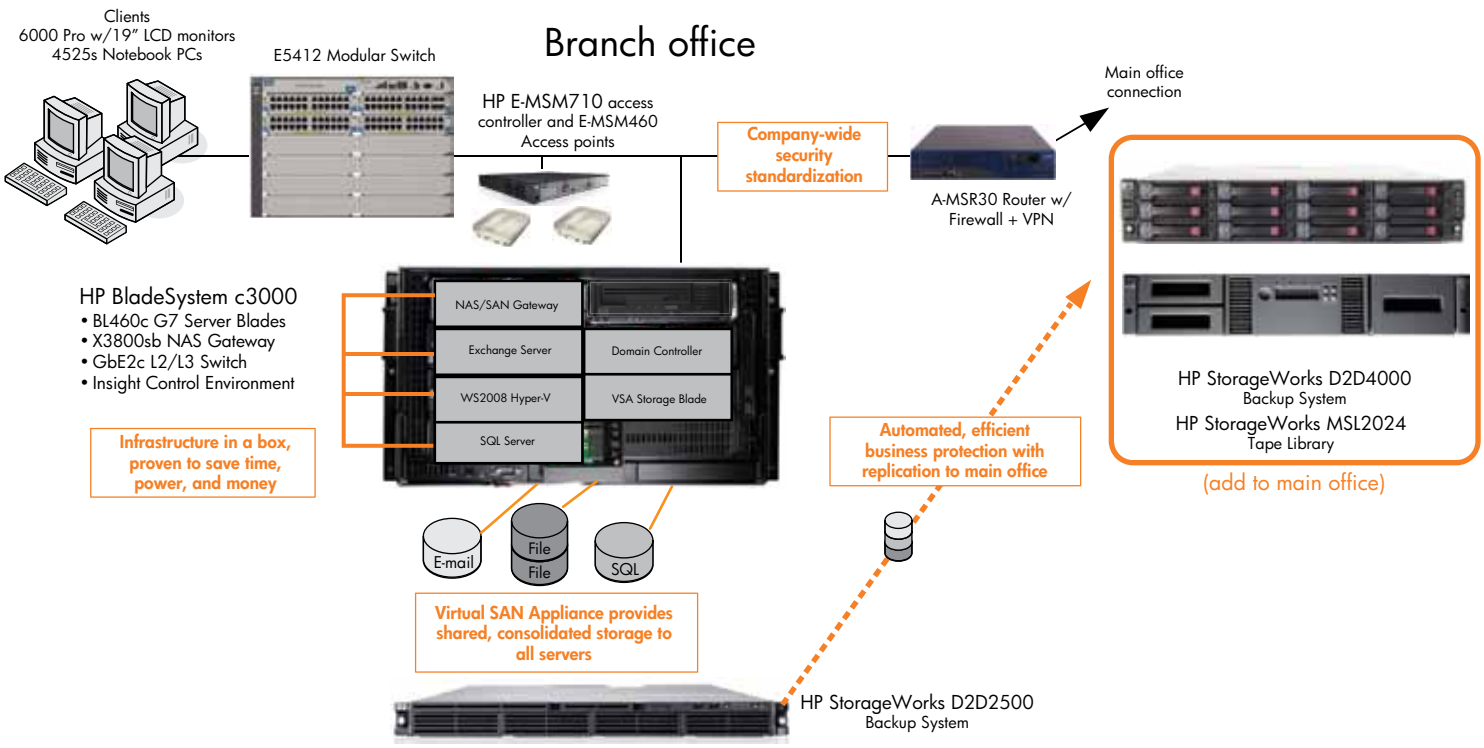
Scenario 3

A regional consolidated office supporting 80–100 employees.
The aim is to cut cost by consolidating servers and storage; and reduce operational risks by standardizing the security policy across branches. (Refer: Figure 3 A)

Typical challenges

- **Server sprawl:** New sites have many brands/models of servers with different levels of manageability and asset control.
- **Storage growth:** All sites are struggling with increasing storage complexities. These issues extend to file share, database, and mailbox storage requirements.
- **Data recovery:** Each site has a different data recovery process that varies in complexity and robustness. This has introduced inefficiencies and unnecessary management overheads.
- **Network security:** There are different networking, firewall, and security solutions at each location. This makes it difficult to manage company-wide security policies and increases the risk of security breaches.

Figure 3 B:
A regional branch office network after implementing HP Branch Office Consolidation Solutions



Proposed solution components (Refer: Figure 3 B)

- HP BladeSystem c3000 at the regional office for consolidated storage with
  - HP StorageWorks X3800sb Network Storage Blade for file services and HP Data Protector Express Software
  - HP ProLiant BL460 G7 blades for dedicated workloads
  - HP ProLiant BL460 G7 with Hyper-V for LOB applications
  - HP D2200sb dense storage blade connects to HP StorageWorks P4000 Virtual SAN Appliance software running on the Hyper-V server blade for a virtual SAN within the blade enclosure
- HP StoreOnce D2D Backup System with built-in, advanced deduplication software
  - Provides flexible disk-based backup enabling network-efficient data replication for scalable, cost-effective data protection of distributed environments
- HP Networking
  - HP E5412 modular Switch Series including the Threat Management Services zl Module (TMS)
  - HP E-MSM710 Access Controller
  - HP E-MSM460 Wireless Access Points
  - HP A-MSR Router with integrated firewall/VPN for enhanced WAN connectivity
- HP Insight Control
- Deploy a unified wired and wireless network with HP Networking E Series switches to provide an enterprise-class feature set with Gigabit connectivity and 10G scalability. PoE/PoE+ functionalities enable convergence solution deployment to power devices such as IP phones and wireless access points

At the main office:

- Backup with disk-to-disk-to-tape
  - HP StoreOnce D2D Backup System with built-in, advanced deduplication software gives you new levels of scalability and performance. An end-to-end solution that seamlessly integrates across the enterprise; from remote offices to the data center
  - Scale from 2 TB to 96 TB (raw capacity) and backup at speeds of up to 2.4 TB/hour
  - Optionally add HP StorageWorks MSL2024 LTO-5 Ultrium 3000 SAS Tape Library with hardware-based data encryption for efficiency around concurrent backups or simultaneous backup and restores HP Data Protector Express Software with encryption key management protects business-critical data

Solution benefits

- **BladeSystem infrastructure-in-a-box:** Helps with server consolidation, giving you superior manageability with HP Insight Control; and time, power, and cooling benefits to reduce TCO.
- **Storage consolidation:** Do away with dedicated file and print servers, and avoid wastage of disk space caused by individual server upgrades. You can simplify storage management, saving the need for specialized storage IT experts. You can also implement centralized data protection schemes, including replication at the corporate headquarters to protect your data from unexpected disruption.
- **Standardized security:** Improve company-wide network security by simplifying the deployment of the security policy. Reduce the need for specialized security expertise at each regional office and provide managed wired and wireless LAN. HP TMS modules or HP TippingPoint Intrusion Prevention System can also be used to fortify security.
- **Secure and reliable network infrastructure:** Highly available branch connectivity to reduce outages and connection problems. Integrated security features and management capabilities enhance system availabilities and reduce onsite support resource needs.

The HP ProLiant advantage

- A new class of scale-up innovations for any application
- Gives small and midsize businesses improved performance and application uptime
- Comes with self-healing resiliency
- Increased administrator productivity to innovate on demand
- Reclaim and extend IT capacity
- Scalable solutions sized and priced for small and medium businesses
- Over 200,000 channel partners with global service and support capabilities

Additionally, small and midsize businesses get:

- Improved energy: 27 percent* more performance per watt
- Enhanced management: Save $73,482* per 100 users
- Quick return on investment: In as little as 30-days

What's more, HP Converged Infrastructure is built on global, industry standards and has been created by HP to leverage the existing technology infrastructure within a small or midsize business.

Get HP advantage

Nothing stands still for your business. It's always your move, and technology is just part of your strategy. With HP and our partners you get more than great technology, you get solutions designed to help you do more for less to manage, protect, and grow your business.

HP Financial Services

HP Financial Services provides innovative financing and financial asset management programs to help customers cost-effectively acquire, manage, and ultimately retire their HP solutions. For more information on these services, or visit: **www.hp.com/go/hpfinancialservices**

* Source: "Gaining Business Value and ROI with HP Insight Control", IDC, September 2010

HP Services

Your business needs to keep up with changes in the economic climate. In order to stay ahead, you need services and support that can scale in the same way your business does.

HP Services can help you manage and evolve your branch office environment so that you can easily handle growth, decrease operational costs, and protect data, while reducing risk. Whatever your needs, you can rely on HP and our Authorized Channel Partners to work with you for better results.

HP Installation Service: Provides initial installation of HP branded products—hardware and software, as well as HP-supported products from other vendors.

HP Support Services: Provides integrated hardware and software support services designed specifically for your technology. HP Services engineers deliver reactive onsite hardware support and over-the-phone software support around-the-clock.

Additionally, **HP Care Pack Services** gives you a portfolio of packaged, affordable, best-in-class services that are scaled to your needs. You get complete technology lifecycle support—and expert advice—at an affordable price.

For more information, visit: **www.hp.com/services/always-on** or to look up the right level of support, visit HP Care Pack Central: **www.hp.com/go/cpc**

Choose HP Branch Office Consolidation Solutions and give your business the competitive edge

To see an interactive demonstration of the branch office consolidation and other solutions for midsize businesses, visit: **www.hp.com/go/midbizsolutions**

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